

REMARKS

Applicant has amended the title to a more descriptive title, rendering moot the objection thereto.

Applicant has replaced the original Abstract with a new Abstract, with the cited informalities corrected, rendering moot the objection thereto.

Applicant has amended claim 5 to correct the cited informalities and render moot the objection thereto.

Applicant respectfully traverses the § 103(a) rejection of claims 5-7 over Keller in view of Lauterbach. In the method of the present invention, as set forth, e.g., in amended claim 5, a spiraling current vapor spirals around an axis of a bore, proceeding towards an opening in the bore, and forming the thermally sprayed film on an inner face of the bore with the sprayed particles. The method of the present invention is depicted schematically below in Fig. A.

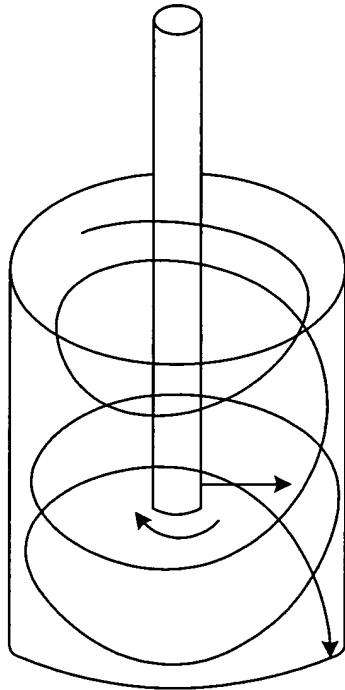


FIG. A

Operation of the Keller apparatus is shown schematically below in Fig. B.

Operation of the Lauterbach apparatus is shown schematically in Fig. C. Operation of an apparatus formed by combining Keller with Lauterbach is shown in Figs. D or E. As can be seen in Figs. D or E, when Keller and Lauterbach are combined, the direction of molten metal particles and current is inclined toward an upstream of air current along the inner face of the bore, and the direction of the molten metal particles and air current is maintained at a constant angle, with respect to a face of the bore. In Fig. A, however, representing the present invention, the direction of the molten metal particles is "towards the inner face of the bore," as shown more clearly in Fig. F, and as recited, e.g., in claim 5 and its dependent claims. Lauterbach, in fact, attempts to avoid the phenomenon of Fig. F.

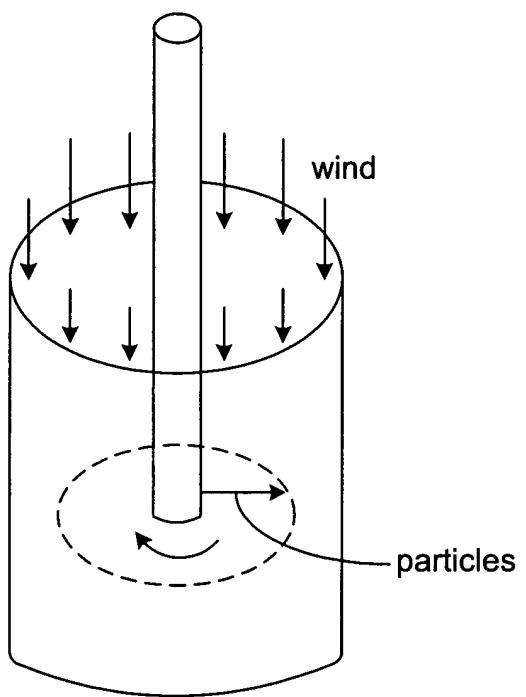


FIG. B

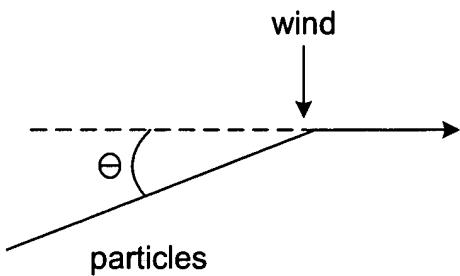


FIG. C

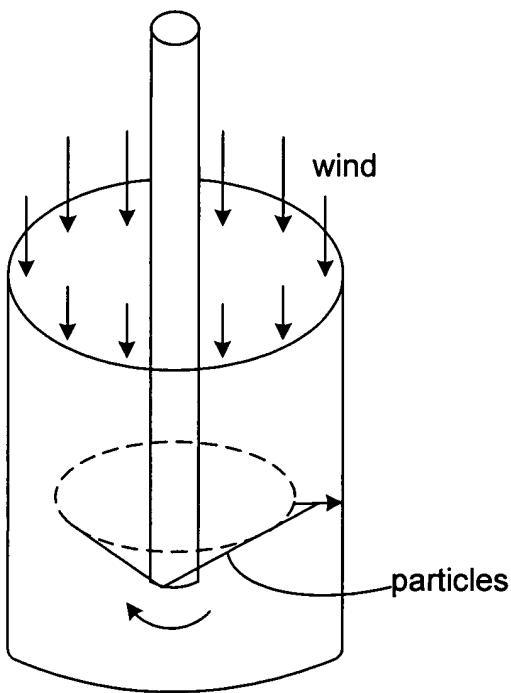


FIG. D

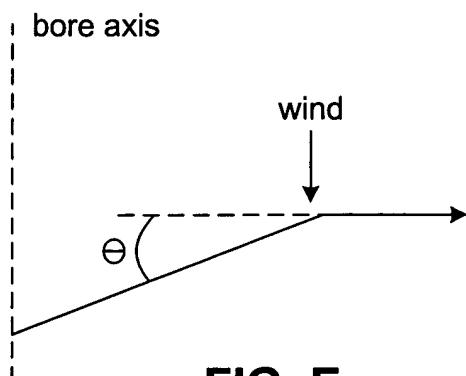


FIG. E

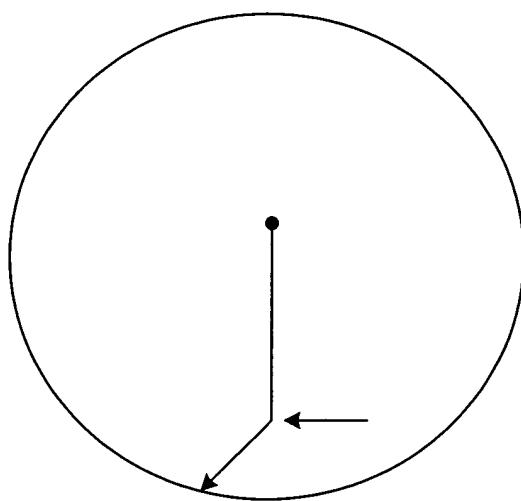


FIG. F

At least for the above reasons, even if Keller and Lauterbach are combined, which applicant does not admit is feasible, such a combination teaches away from the present invention, and does not render obvious the present invention.

In view of the foregoing amendments and remarks, Applicant respectfully requests reconsideration of this application and timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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Attachments: Abstract

ABSTRACT

A technique is presented for preventing the peeling of a thermally sprayed film formed on an inner face of a bore of a cylinder block. A thermal spraying device 20 is provided with: a thermal spraying gun 22 that is inserted into a bore 14 passing through a cylinder block 12; and a pair of sucking pipes 24a, 24b 24 for generating a spiraling air current 28 that spirals around an axis of the bore 14 while approaching an opening of this bore 14.

The spiraling air current 28 creates a flow of vapors towards the center of the bore 14. Creating the flow towards the center of the bore 14 causes fumes contained among particles to gather at the center of the bore 14. The fumes gathered at the center of the bore 14 are carried by the spiraling air current 28 towards the opening of the bore 14, and are sucked out of the bore 14. As a result, a high-quality thermally sprayed film scarcely containing fumes can be formed on the inner face of the bore 14.